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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Terunao HANAOKA et al.

Group Art Unit: 2823

Application No.: 10/698,432

Examiner: K. Nguyen

Filed: November 3, 2003

Docket No.: 108086.01

For: SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREFOR,
CIRCUIT BOARD, AND ELECTRONIC EQUIPMENT

REQUEST FOR RECONSIDERATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the April 20, 2004 Office Action and July 19, 2004 personal interview, reconsideration is respectfully requested in light of the following remarks. Claims 1-19 are pending.

Applicants appreciate the courtesies shown to Applicants' representative by Examiners Nguyen and Coleman in the July 19 personal interview. Applicants incorporate a separate record of the substance of the interview into the following remarks.

The Office Action rejects claims 1-19 based on the judicially created doctrine of "obviousness-type" double patenting over claims 1-17 of U.S. Patent 6,667,551. Applicants respectfully traverse the rejection.

As agreed during the personal interview, the rejection is improper. Thus, Applicants respectfully request withdrawal of the rejection.

The Office Action rejects claims 1-2 and 5-19 under 35 U.S.C. § 102(e) over U.S. Patent Publication 2001/0015652 A1 to Eldridge et al. (hereinafter "Eldridge"). Applicants respectfully traverse the rejection.

As discussed during the personal interview, Eldridge does not disclose a method of manufacturing a semiconductor device, the method comprising: (a) forming a hole in an electrode, the electrode formed on a semiconductor element; (b) after the hole is formed in the electrode, forming a through-hole in the semiconductor element so as to be connected to the hole; and (c) forming a conductive layer in a region including an inner side of the through-hole, as recited in claim 1.

In rejecting claim 1, the Office Action alleges that Eldridge discloses a hole formed in an electrode, the electrode formed on a semiconductor element and cites reference numeral 302 in Fig. 3A of Eldridge. Reference numeral 302 in Eldridge merely describes an insulating substrate, and certainly not the step of forming a hole in an electrode, as recited in claim 1. There is no disclosure, teaching, or even suggestion that the insulating substrate is a semiconductor element and no disclosure, teaching, or even suggestion that there is an electron on the semiconductor element at the time the hole is formed. Thus, reference numeral 302 cannot be reasonably be considered to disclose a hole formed in an electrode, the electrode formed on a semiconductor element, when it only describes an insulating substrate.

Furthermore, the Office Action alleges that Eldridge discloses that after the hole is formed in the electrode, a through-hole is formed in the semiconductor element so as to be connected to the hole and cites reference numerals 306 and 308 in Fig. 3A of Eldridge. Reference numerals 306 and 308 in Eldridge describe through-holes. However, there is no indication in the Fig. 3A, or any where else in Eldridge, that the through-holes 306, 308 are formed after a hole is formed in an electrode (not disclosed in Eldridge), or how the through

holes 306, 308 connect the alleged electrode to the hole in the electrode (also not disclosed in Eldridge). This is evidenced by the fact that the portion of the specification relied on as allegedly disclosing this element only describes forming through-holes 306, 308 and no other holes (paragraphs [0167-0168] of Eldridge).

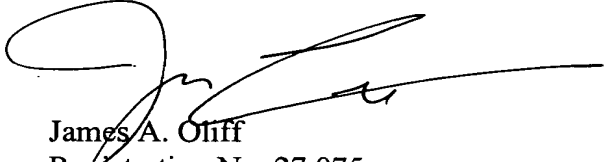
As discussed during the personal interview, for at least these reasons, Eldridge does not disclose all of the features of claim 1. Therefore, claim 1 is patentable over Eldridge. Further, Applicants respectfully assert that claims 2 and 5-19 are patentable for at least the reasons that claim 1, from which they depend, is patentable, as well as for the additional features they recite. Thus, Applicants respectfully request withdrawal of the rejection.

The Office Action rejects claims 3 and 4 under 35 U.S.C. §103(a) over Eldridge as applied to claims 1-2 and 5-19, and further in view of U.S. Patent 4,806,111 to Nishi et al. Applicants respectfully traverse the rejection.

This rejection is premised upon the presumption that Eldridge discloses all of the features of claim 1. Because, as discussed above, Eldridge does not disclose the features of claim 1, the rejection is moot. Thus, Applicants respectfully request withdrawal of the rejection.

In view of the foregoing, Applicants respectfully submit that this application is in condition for allowance. Applicants earnestly solicit favorable reconsideration and prompt allowance of claims 1-19.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, Applicants invite the Examiner to contact the undersigned at the telephone number set forth below.



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Date: July 20, 2004

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